

Clipping, July 4, 1908

BELL et al. : v. : INTERFERENCE N o 34,455. MYERS. :

“EXHIBIT N o 5 of Bell et al., Scientific American of July 4, 1908.”

R. C. Fitzhugh Notary Public.

13

July 4, 1908. **Scientific American**

THE “JUNE BUG” AEROPLANE—A COMPETITOR FOR THE SCIENTIFIC AMERICAN TROPHY.

About two months ago we illustrated the second aeroplane to be produced by Dr. Bell's Aerial Experiment Association. This machine made a number of successful flights, the longest of which was made with Mr. G. H. Curtiss acting as aviator, and in the course of which a distance of 1,017 feet was covered. The chief novelty of the second machine consisted in the application of movable triangular tips to the ends of the arched aeroplane surfaces. These tips were pivoted on their forward edge and connected by a cord to the body of the aviator, so that, when making a turn, by inclining his body toward the center of the circle, he would give the inner tips a greater angle, and thus tend to turn the machine by making more resistance at the inner end. The aeroplane had pneumatic-tired wheels and was fitted with a horizontal rudder in front in a similar manner to most of the foreign aeroplanes. It was also fitted with a rectangular box tail which, however, was much smaller than the tails ordinarily used on the Farman and Delagrange aeroplanes. The motor—an 8-cylinder air-cooled Curtiss—was mounted in the center of the aeroplane just back of the aviator, and it carried a six-foot propeller on the rear end of its crankshaft. This second aeroplane was demolished when a flight was attempted in it by one of the members of

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the association. The construction of a third machine was immediately started. This was recently completed, experiments having been made with it last week.

Side View of the "June Bug" Aeroplane.

Our illustrations show this machine on the ground and when in flight. The changes which have been made in the general outline and design are few, the chief of these being the fitting of a rather smaller tail and the arching of the surfaces of this tail from end to end in the same manner as was done with the main surfaces. Another new point in the design is the construction of the surfaces so that they can readily be detached from the main central chassis, a view of which is shown in one of the illustrations. The forwardly-projecting members of this chassis are no longer covered with cloth. They simply form a bamboo skeleton frame which supports the horizontal rudder. This rudder is cut away in the center so that it can move on either side of the frame. A long rod is attached to its forward edge at right angles to the surface of the rudder and connected by wires to a lever for the purpose of operating it. A steering wheel is used for working the vertical rudder in the tail at the rear, while the movable tips connected with the aviator also assist in steering.

THE "JUNE BUG"—THE THIRD AEROPLANE OF THE AERIAL EXPERIMENT ASSOCIATION.

The Central Chassis with the Planes Detached. The horizontal rudder is carried on a forwardly-projecting bamboo frame. The motor and propeller are back of the aviator. The center part of the upper plane is seen at the top.

The Aeroplane in Flight, Just After Leaving the Ground. Note the cloud of the dust raised by the machine; also its apparent stability.

After several preliminary flights ranging from 456 to 1,266 feet, the aeroplane, which has been christened the "June Bug," on June 25 made the two longest flights that have ever been publicly accomplished by a heavier-than-air flying machine in America at any

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accessible place. These flights were both in a nearly straight line. The distance covered in the first flight, which was made in the morning, was 2,175 feet in forty-one seconds. This corresponds to a speed of 36.17 miles an hour. In this test, the aeroplane rose to a height estimated at about 40 feet, which is quite a considerable height for one of these machines, being about four times as high as they usually fly abroad.

In the afternoon, another flight was made with Mr. Curtiss again acting as aviator. In this, the seventh flight the machine had made, and the eighth time Mr. Curtiss had been in the air in an aeroplane, a distance of 3,420 feet was covered in a slightly-curved course in exactly one minute. This is a rate of speed of 38.86 miles an hour. Thus, in his eighth flight and his second or third attempt at flying a kilometer (3,280 feet) in a straight line (which is the distance required in the first contest for the Scientific American trophy), Mr. Curtiss succeeded in covering 140 feet more than the required distance over a slightly curved course, which certainly speaks well for the machine and for its aviator. Notice has been filed with the Aero Club of America for a trial for the trophy. The Fourth of July and Hammondsport, N. Y., have been appointed as the time and place for the trial. It is to be hoped, also, that this machine will be developed sufficiently so that it can fly in competition with Delagrange and the Wright and Her?ing aeroplanes in August, when it is proposed to have a competition for the trophy either in the vicinity of New York or Washington.

As we have no particulars of the conditions under which these two long flights were made, we can only say that according to report the aeroplane surfaces were thoroughly varnished and made airtight before the flights were attempted, and that this varnishing of the surfaces increased the lifting capacity of the aeroplane and made it possible to fly with less power than had been required hitherto. In the first long flight the machine is said to have tipped sharply to one side shortly after it rose in the air, but the aviator was able to right it again by means of the movable wing tips, and from then on he managed to keep it level. No difficulty was had in rising from the ground after running along on it a distance of about 100 feet.

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The center part, or chassis, of the aeroplane, which is shown in one of our photographs, developed a speed of 45 miles an hour when driven along the road by the air propeller. The construction of the machine in this manner is a great advantage, since it can readily be taken apart and packed for transportation when desired.

AN AERONAUTIC SOCIETY FOR INVENTORS

A new society to be known as "The Aeronautic Society" has just been incorporated in New York State for the purpose of exploiting aeronautics in general and the heavier-than-air flying machine in particular. This society will take the place of the Aviation Section, which the Aero Club of America started to for last spring, but which was subsequently dropped. The main idea of this new society is to help the worthy inventors to try out their ideas in a practical way. It is proposed to have a suitable ground within a convenient distance of New York city where experiments in aviation can be made; to furnish a gasoline motor for the conducting of such experiments: and to aid the members of the society in every way possible to test their ideas. Full particulars can be had from the Secretary of the Society, at 2 E, 29th Street, New York.

Front View, Showing Movable Wing Tips.

The society expects to bring Leon Delagrange to America, about the 20th of August, and to have him make a series of flights in the vicinity of New York. It is believed that this will stimulate aviation to a great extent in this country.

Aeronautical Notes.

On June 22, at Milan, Italy, M. Delagrange circled nine times around the Piazza d'Armi in 16 ½ minutes. The distance covered was miles, and the speed 34 ½ miles an hour. The following day he remained in the air 18 minutes, but touched the ground slightly while

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making one of the rounds. After some further flights at Turin, it is expected that he will visit America.

The huge new Zeppelin airship, which is 426 feet long and 43 feet in diameter, and which has an envelope constructed of thin sheet aluminium stretched upon a rigid framework, made a successful trial trip on June 23, for the purpose of testing its new steering gear. The airship remained in the air 2 hours and 13 minutes, maneuvering above Lake Constance and several of the towns on its shore. The steering apparatus worked perfectly, and Count Zeppelin was quite satisfied with it. After a few more tests have been made, it is expected to make a long flight.

The new 328-foot French military dirigible "La Republique" made its first flight on the 24th ultimo. The flight lasted 35 minutes. The airship traveled at a height of some 300 feet, and carried a dead weight of 2,800 pounds.